

RESILIENT INSTALLATION GUIDELINES FOR LVT PRODUCTS

I. GENERAL INFORMATION

All instructions and recommendations should be followed for a satisfactory installation.

- All products must acclimate to the room conditions in which they are being installed for a minimum of 12 to 24 hours. Room conditions must be a controlled environment. Acclimate cartons lying flat, not on the end or on the side, stacked no more than five cartons high. Allow air movement between boxes and avoid storing flooring in direct sunlight.
- Resilient flooring should only be installed in temperature-controlled environments (60-85 degrees Fahrenheit.). It is necessary to maintain a constant temperature before, during, and after the installation. Therefore, the permanent or temporary HVAC system must be in operation before the installation of resilient flooring. Portable heaters are not recommended as they may not heat the room and subfloor sufficiently. Kerosene heaters should never be used.
- Variations in subfloor flatness should not exceed 3/16" in 10' or 1/8" in 6'. Grind high spots down and/or fill low spots with a quality patching compound. Allow the patch to completely dry before installation. Follow the patch manufacturer's installation guidelines.
- Use cementitious patching and leveling compounds that meet or exceed maximum moisture level and pH requirements. Use of gypsum-based patching and/or leveling compounds that contain Portland or high alumina cement and meet or exceed the compressive strength of 3,000 psi is acceptable.
- For renovation or remodel work, remove any existing adhesive residue so that 100% of the overall area of the original substrate is exposed.
- Most installations will need approximately a 10% cutting allowance added to the square footage of the room.
- Proper conditioning of the job site is necessary. Flooring planks should not be exposed to sudden changes in temperature. Excessive heat can cause uneven expansion and contraction and result in floor buckling. Window coverings can be installed to reduce excessive heat.
- Avoid exposure to direct sunlight for prolonged periods, doing so may result in discoloration. During peak sunlight hours, the use of drapes or blinds is recommended. Excess temperature due to direct sunlight can result in thermal expansion and UV fading.
- Store, transport, and handle the flooring planks in a manner to prevent any distortions. Distortions will not disappear over time. Store cartons flat, never on edge. Ensure that the flooring planks are lying flat at the time of installation.
- Installations of carpet, metal strips and other transition moldings should not push fully into the flooring and should allow for some slight movement. Do not nail or staple trim so that it restricts floor movement such as nailing into the floor or too tightly against the floor surface.
- Protect the floor from heavy-rolling loads, other trades, and movement of appliances by using a construction grade protectant such as Ram Board. Chair pads or mats are required under roller castors and leg protectors, a minimum of 1.5" diameter, are required under chair legs. Floating floors are not approved for use in areas with heavy rolling loads such as hospital beds and electric wheelchairs, i.e.
- Stagger end joints by a minimum of 12" on a random basis.
- Install product after all other trades have completed work that could damage the flooring.
- Installation of the flooring implies acceptance of materials.
- To minimize shade variation, mix and install planks from several cartons.
- Inspect all planks for damage before installing. If you have any concerns about the product fit or finish, please stop and contact your dealer or location of purchase. Claims will not be accepted for flooring that has been cut to size and/or installed.
- Installation Methods: Loose Lay and Glue Down
- This flooring is waterproof and reliably secures the flooring panels on all four sides. However, excessive moisture in the subfloor could promote mold, mildew, and other moisture-related issues like the trapping of moisture emissions under the flooring, which may contribute to an unhealthy indoor environment.

- It is up to the flooring contractor to determine if a subfloor is not cured. Should the subfloor not be cured, a moisture barrier/mitigator like 6 mil poly should be used for a successful installation and to prevent the material from being damaged by (moisture) vapor from the subfloor.
- If the product comes with an attached pad, do not install an additional cushion beneath the flooring. This will void the manufacturer's warranty.
- Crumb rubber underlayment is not an acceptable option for use with resilient floor coverings due to performance issues resulting from chemical incompatibilities.
- When adhering flooring to stairs use a permanent bonding adhesive (urethane adhesive or solvent-free construction adhesive.)

II. SUBFLOOR INFORMATION

All subfloors must be clean, flat, dry, and structurally sound. The correct preparation of the subfloor is a major part of a successful installation. Subfloor must be flat – subfloor flatness should not exceed 3/16" in 10' or 1/8" in 6.

A. Wood Subfloors

Do not install material over wood subfloors that lay directly on concrete or over-dimensional lumber, or plywood used over concrete. Refer to ASTM F1482 for panel underlayment recommendations.

1. Do not apply sheet plastic over wood subfloors.
2. Basements and crawl spaces must be dry. The use of a 6 MIL poly is required to cover 100% of the crawl space on earth. Crawl space clearance from ground to underside of the joist is to be no less than 18" and perimeter vent spacing should be equal to 1.5% of the total square footage of the crawl space area to provide cross ventilation. Where necessary, local regulations prevail.
3. **DO NOT** install over-sleeper construction subfloors or wood subfloors applied directly over concrete.
4. All other subfloors - Plywood, OSB, particleboard, chipboard, wafer board, etc. must be structurally sound and must be installed following their manufacturer's recommendations. Local building codes may only establish minimum requirements of the flooring system and may not provide adequate rigidity and support for proper installation and performance. If needed add a layer of APA-rated underlayment, fasten, and secure according to the underlayment manufacturer's recommendations.
5. Resilient flooring is not recommended directly over fire-retardant-treated plywood or preservative-treated plywood. An additional layer of APA-rated 1/4" thick underlayment should be installed.

B. Concrete Subfloors

NEW AND EXISTING CONCRETE SUBFLOORS SHOULD MEET THE GUIDELINES OF THE LATEST EDITION OF ACI 302 AND ASTM F 710, "STANDARD PRACTICE FOR PREPARING CONCRETE FLOORS TO RECEIVE RESILIENT FLOORING" AVAILABLE FROM THE AMERICAN SOCIETY FOR TESTING AND MATERIALS; [HTTP://WWW.ASTM.ORG](http://www.astm.org).

- The surface of a concrete subfloor must be dry, clean, smooth, and structurally sound. It must also be free of depressions, scale, or foreign deposits of any kind.
- The surface shall be free of dust, solvents, varnish, paint, wax, oil, grease, residual adhesive, adhesive removers, and other foreign materials that might affect the adhesion of resilient flooring to the concrete or cause a discoloration of the flooring from below. Spray paints, permanent markers, and other indelible ink markers must not be used to write on the back of the flooring material or used to mark the concrete slab as they could bleed through, telegraphing up to the surface and permanently staining the flooring material. If these contaminants are present on the substrate they must be mechanically removed before the installation of the flooring material.
- Many buildings built before 1978 contain lead-based paint, which can pose a health hazard if not handled properly. State and federal regulations govern activities that disturb lead-based painted surfaces and may also require notice to building occupants. Do not remove or sand lead-based paint without consulting a qualified lead professional for guidance on lead-based paint testing and safety precautions. For non-lead-based paint, a good paint remover for many concrete subfloors is a solution of Trisodium Phosphate and hot water, mixed and applied according to the manufacturer's instructions and recommended safety precautions. Paints with a chlorinated rubber or resin base that cannot be removed by Trisodium Phosphate may be removed by grinding with a concrete or terrazzo grinder. The manufacturer does not recommend the use of solvents to remove paints or old adhesive residues because the solvents can remain in the concrete and negatively affect the new installation. Be certain the worksite is well ventilated and avoid breathing dust whenever sanding. If high dust levels are anticipated, use an appropriate NIOSH designated dust respirator. All power sanding tools must be equipped with dust collectors. Avoid contact with skin or eyes. Wear gloves and eye protection, and long-sleeve loose-fitting clothes.
- After the concrete has cured and is dry, clean construction joints, saw cuts, score marks, and cracks, and fill with a patching compound on any grade level. Repaired areas must be finished flush with the surface of the concrete and allowed to fully dry before the installation of the floor covering.

- Actual expansion joints or other moving joints with elastomeric fillers are designed to absorb movement in concrete slabs. Cementitious underlayment, patches and resilient flooring installed across expansion joints often crack or buckle when the slabs move. The manufacturer does not recommend flooring products be installed across expansion joints or isolation joints. Expansion joint covers are available for use with various floor coverings and should be specified by the architect.
- Dusty concrete slabs may be primed with one coat of latex primer. Sweep or vacuum the concrete and apply the primer with a 3/8" nap paint roller. You may also prime concrete subfloors with the recommended flooring adhesive for the material about to be installed. After sweeping/vacuuming, apply the adhesive using a smooth-edge trowel. When using adhesive as a primer, allow the adhesive to dry completely. After drying, install the flooring following the recommended installation system. NOTE: A dusty concrete floor on-grade or below-grade may be a sign of alkali salts.
- A rough concrete floor can be ground smooth with a commercial diamond or carbide-equipped grinding machine. If the concrete subfloor is extremely rough or uneven, it may be too great a job to smooth this way. In this case, apply a cementitious underlayment. A smooth, flat, uniform surface is necessary as a good base for resilient flooring.
- Required Moisture Testing - maximum moisture level per ASTM 1869 CaCl is 8 lbs. and ASTM 2170 In-situ Relative Humidity 90% per 1000 sq. ft. in 24 hours.
- Do not install over concrete with a history of high moisture or hydrostatic conditions. Excessive moisture in the subfloor could promote mold, mildew, and other moisture-related issues like the trapping of moisture emissions under the flooring, which may contribute to an unhealthy indoor environment. The manufacturer does not warrant nor is responsible for damage to floor covering due to moisture-related issues.
- The pH level of concrete should be 7 or greater and less than or equal to 9 to proceed with the installation.
- The final responsibility for determining if the concrete is dry enough for installation of the flooring lies with the floor covering installer.

NOTE: IT MAY NOT BE THE FLOOR COVERING INSTALLER'S RESPONSIBILITY TO CONDUCT THESE TESTS. IT IS, HOWEVER, THE FLOOR COVERING INSTALLER'S RESPONSIBILITY TO MAKE SURE THESE TESTS HAVE BEEN CONDUCTED, AND THAT THE RESULTS ARE ACCEPTABLE BEFORE INSTALLING THE FLOOR COVERING. WHEN MOISTURE TESTS ARE CONDUCTED, IT INDICATES THE CONDITIONS ONLY AT THE TIME OF THE TEST.

Lightweight Concrete

All recommendations and guarantees as to the suitability and performance of lightweight concrete under resilient flooring are the responsibility of the lightweight concrete manufacturer. The installer of the lightweight product may be required to be authorized or certified by the manufacturer. Correct on-site mixing ratios and properly functioning pumping equipment are critical. To ensure proper mixture, slump testing is recommended.

- Lightweight aggregate concretes having dry densities greater than 90 lbs. per cubic foot may be acceptable under resilient flooring.
- Concrete slabs with heavy static and/or dynamic loads should be designed with higher strengths and densities to support such loads.
- The surface must be permanently dry, clean, smooth, free of all dust, and structurally sound.
- Three internal relative humidity tests should be conducted for areas up to 1000 SF. One additional test, for each additional 1000 SF.

Radiant Heating

Radiant-heated subfloor systems can be concrete, wood, or a combination of both.

The heating systems components must have a minimum of 1/2" separation from the flooring product. The system must be on and operational for at least 2 weeks before installation to reduce residual moisture. Three days before installation lower the temperature to 65 degrees, after installation gradually increase the temperature in increments of 5° F to avoid overheating. The maximum operating temperature should never exceed 85°F. The use of an in-floor temperature sensor is recommended to avoid overheating. Contact the manufacturer of your radiant heating system for further recommendations.

Existing Floor Coverings

Flooring can be installed over most existing hard-surface floor coverings, provided that the existing floor surface is fully adhered, clean, flat, dry, structurally sound, and free of deflection.

- Existing sheet vinyl floors should not be cushioned and not exceed more than one layer in thickness. Soft underlayment and soft substrates will compromise the product's locking ability as well as diminish its indentation resistance.
- Installation is NOT allowed over any type of carpet.
- Do NOT install over wood floors adhered to concrete.
- This product can be installed over existing ceramic/porcelain tile products with up to a 1/4-inch-wide grout joint. If the grout joint width exceeds 1/4 inch, a cementitious patching compound should be used to fill the grout joint to make it smooth with the surface of the tile.
- If needed overlay the panels with a 1/4" (6 mm) plywood and properly fasten to the access panels before the installation of the floor covering. Before underlayment installation, repair any loose or unstable panels. Use the appropriate installation methods for the product.

III. INSTALLATION

LAYOUT OF THE ROOM

Before laying out the floor, check the wall you are starting from and make sure it is square to the opposite wall (planks should run lengthwise against the longest wall, and if possible, parallel to incoming sunlight). Simply measure the room from opposite ends of the wall to the far wall. If the measurements are different, you can make adjustments on the first row of planks by scribing the plank on the edge. As with all plank products it is best to start along the longest exterior wall.

The width of the first row of planks should be approximately the same width as the last row. This may require cutting the first-row plank to a shorter width. Measure across the room in inches and divide by the width of a plank to see how many full-width planks will be used and what size width will be needed for the last row. The last row should never be less than 2 inches in width. Lay the first row of planks out to determine if you need to adjust the length of the first plank to avoid a small piece of fewer than 12 inches on the opposite wall from where you started. When installing the plank, it is required to stagger the rows so that the end joint seams are a minimum of 12 inches apart and the seams are not in a straight uniform line. We recommend the staggered random method. Do NOT stair-step the material. Installation should start in a corner and proceed from that corner working across the room making sure that your end pieces against the wall are a minimum of 12 inches and staggering the end joints a minimum of 12 inches.

- Loose Lay flooring must be fitted tight; check that room edges are solid, and all thresholds or openings are edged with a 4-inch strip of suitable pressure-sensitive adhesive. The tile/planks must be fitted tightly to the wall and to themselves.
- If the floor area to be installed has any wall longer than 12 feet, the perimeter of the room requires a 4-inch strip of pressure-sensitive adhesive applied to the subfloor, and also at 12-foot distances parallel to each perimeter wall, covering the floor in a grid.
- Heavy Traffic Areas
 - In areas of high traffic – entrances, rolling loads, frequent wheeled traffic – it is recommended to install tiles/planks with a full coverage pressure-sensitive adhesive. This adhesive used should still allow for easy peel-up and replacement of tiles/planks in this area.
- Any unevenness at joints between planks and tiles must be sanded to a level surface.

ADHESIVE APPLICATION

Follow the instructions on the adhesive labels.

- Use a trowel with an appropriate notch size. Do not use worn trowels.
- Spread the adhesive evenly with a proper trowel held at a 60-degree angle avoiding skips or voids and excessive adhesive application.
- Only spread sufficient adhesive that can be covered within the adhesive working time.
- Tiles/Planks must be placed into the adhesive as specified (follow label directions).
- Install rows to chalk line making sure tiles/planks are precisely aligned with the chalk line and adjacent tiles.
- Randomly check tiles/planks for complete coverage of adhesive onto the back of the tile, especially near the end of each adhesive spread. If there is little or no adhesive transfer, or if the adhesive has flashed off or skinned over; adequate bonding may not be possible. Scrape the flashed-off adhesive from the floor and spread fresh adhesive.
- If tiles/planks shift, use releasable masking tape diagonally over seams to keep tiles tight and aligned.
- Wet-Set Application: Do not work on top of freshly installed flooring. This will minimize tile/plank shifting, and adhesive displacement, and prevent the wet adhesive from oozing up and getting onto the surface of the new flooring. If you must work on top of newly installed flooring, use kneeling and or walk boards.
- The floor must be rolled in both directions using a 100-pound 3-section roller. Roll the floor as soon as conditions permit without the tiles/planks sliding or adhesive bleeding to the surface. Roll floor again 90 degrees to the first within 1 hour.
- Clean excess adhesive as you install it before it is allowed to dry. Use a soapy clean, soft cloth to remove wet excess adhesive.
- Clean up all debris as you work.
- Wait 24 hours for normal foot traffic and wait 48 hours for point and rolling loads after installation.
- During the first five days minimize heavy wet cleaning to allow the adhesive to be fully set.

Maintenance

Initial Maintenance

- Sweep, dust mop, or vacuum to remove loose dirt and grit.
- Always use a neutral pH cleaner.
- Allow flooring to dry completely before foot traffic.

Daily & Weekly Maintenance

- Sweep, dust mop, or vacuum the floor daily to remove loose dirt and grit. Do not use a vacuum with bristles or a beater bar.
- Must clean liquid spills immediately.
- Damp-mop (do not flood floor) as needed.

Preventative Maintenance

- Chair pads are required under roller castor chairs.
- Furniture leg protectors, minimum of 1.5" in diameter, are required under all furniture legs.
- Use protective boards when sliding heavy furniture across the flooring.
- Never apply rubber mats directly on top of vinyl flooring.
- Place walk-off mats outside entry doors to prevent dirt and sand from entering the installation.
- Protect flooring from direct sunlight with window and glass door coverings to prevent fading.
- Any additional floor finishes are not required and not approved. The application of any additional floor finishes will void all warranties.